

## REMARKS

This amendment is responsive to the May 26, 2010 Office Action. Applicant respectfully requests reconsideration of the application, withdrawal of all rejections, and allowance of the application in view of the remarks below.

### I. Amendments to the Claims

Claims 1, 2, 4-8, and 10-20 are pending in the case of which claims 10, 11, 16, and 17 are cancelled and claims 1, 2, 12, and 14 are amended. Specifically:

Claims 1 and 2 are amended to remove the reference to hydrochloric acid. This amendment can be supported by the claims as filed. Claims 1 and 2 are also amended to indicate the pH of the concentrate after dilution is between 1 and 4. This amendment can be supported by Applicant's specification as originally filed.

Claims 12 and 14 are amended to indicate the pH of the concentrate after dilution is between 1 and 4. This amendment can be supported by Applicant's specification as originally filed.

Claim amendments and claim cancellations are made without prejudice to the patentability of the cancelled subject matter. Applicant reserves the right to file divisional or continuation applications directed to subject matter cancelled herein.

Applicant believes these amendments introduce no new material.

### II. Rejection of Claims Under 35 U.S.C. § 112, First Paragraph

The Examiner rejects claims 10 and 11 as failing to comply with the requirements for written description support. In particular, the Examiner asserts pH 5 is not supported by the original specification. The claims are cancelled thus mooting the rejection.

### III. Rejection of Claims Under 35 U.S.C. § 103(a)

The Examiner rejects claims 1-2, 4-8, 10-11, and 16-20 as obvious over CN1252940 in view of The Agrochemicals Handbook, Farm Chemicals Handbook '98, U.S. 3,879,188 (the '188 patent), and CABA abstract 80:49077, further in view of Ethephon publication (9/1998) and Imidacloprid publication (3/1995).

Claims 10, 11, 16, and 17 are cancelled, thus mooting the rejection as to those claims.

In the interest of expediting examination, claim 1 is amended to reflect the acid is phosphoric acid. Likewise, claim 2 is amended to reflect the acid is phosphoric acid. Applicant believes this amendment addresses the Examiner's concern.

Claim 19 depends from claim 1 and is nonobvious for at least the same reasons as claim 1.

Claims 4-8, 18, and 20 depend from claim 2 and are nonobvious for at least the same reasons as claim 2.

The Examiner further rejects claims 1-2, 4-8, and 10-20 as obvious over the '188 patent in view of CABA abstract 80:49077, The Agrochemicals Handbook, The Farm Chemicals Handbook '98, CN 1252940, and the Ethephon publication. The Examiner asserts Applicant does not address the specific teachings of the cited publications. Claims 10, 11, 16, and 17 are cancelled, thus mooted the rejection as to those claims. As to the remaining claims, Applicant respectfully disagrees.

First, claim 1 was previously amended to include the transitional phrase "consisting essentially of" to indicate the scope of the claim is the specified materials and those that do not materially affect the basic and novel characteristic(s) of the claimed invention. See MPEP § 2111.03 Transitional Phrases and *In re Herz*, 537 F.2d 549, 551-52, 190 USPQ 461, 463 (CCPA 1976). As such, claim 1 does not include imidacloprid as part of the formulation, but can include one or more of a wetting agent, an emulsifier, a solvent, and a surface active agent. Similarly, claim 2 was previously amended to include the transitional phrase "consisting essentially of" to describe the concentrate composition prepared in the method of claim 2. As such, the composition mentioned in claim 2 does not include imidacloprid.

Second, referring to the Examiner's statement in the August 10, 2009 Office Action, Applicant points out the following:

The Examiner cites the '188 patent to teach addition of an acid for ethephon stability (see sentence bridging columns 9 and 10). Likewise, the Agrochemicals Handbook and the Farm Chemicals Handbook '98 are cited to teach ethephon as stable in solutions with pH of less than 3.5 or 3, respectively.

The Agrochemicals Handbook states:

“Stability: Stable in aqueous solutions having pH values less than 3.5. Otherwise, decomposition occurs with the separation of ethylene.”

The Agrochemical Handbook also states:

“Mode of action: Acts via liberation of ethylene, which is absorbed by the plant and interferes in the growth processes.”

Since ethylene is the active molecule, one skilled in the art would interpret the cited publications as teaching the application of ethephon at a higher pH in order to be effective. Further, these references teach (and one skilled in the art at the time the application was filed would understand) that increased stability of ethephon results in decreased decomposition of ethephon to ethylene, i.e. the ethephon should be stored at low pH in order to prevent premature generation of ethylene, then tank-mixed for application to a pH around 5. Setting the tank mix pH to 5 allows the ethephon to generate ethylene, which is the desired effect at application of the ethephon to cotton. One skilled in the art at the time the application was filed would have believed that in order to achieve normal ethylene generation, the pH of the ethephon formulation at the time the application was filed should be at 5 or above such that the ethylene could be released on the plant.

In contrast, Applicant has determined that application of an ethephon formulation having a pH between 1 and 4 to cotton plants surprisingly caused greater leaf defoliation and bigger boll opening than ethephon applied at a pH of 5 or more. As stated above, this is contrary to expectations, as this low pH is used to maintain stability of ethephon while in storage and prior to use.

The Examiner is right when he asserts the cited publications teach stability of ethephon at low pHs. However, because the art teaches application of ethephon at a pH of 5 or more, and because it was believed that the higher pH was necessary to generate ethylene from the ethephon upon application of the diluted formulation, no one recognized nor would have expected that the formulation and application of ethephon at a low pH would have an even greater effect on leaf defoliation and boll opening. Though not wishing to be limited by theory, Applicant believes that the lower pH supports *greater uptake of the ethephon* by the plant. The ethephon is then transmitted systemically throughout the plant and to the bolls and leaves where it is decomposed at the site into ethylene. Applicant believes it may be the enhanced conversion of ethylene at the

site of the bolls and leaves that causes more efficient and efficacious control of defoliation and boll opening. As such, none of the cited publications alone or in combination teach or suggest formulation of ethephon at a pH between 1 and 4 when for anything other than stability at storage.

Thus, for at least these reasons, claim 1 is non-obvious over the '188 patent in view of CABA abstract 80:49077, The Agrochemicals Handbook, The Farm Chemicals Handbook '98, CN 1252940, and the Ethephon publication.

The language of claim 12 parallels the language of claim 1 and is therefore nonobvious for at least the same reasons as discussed above with respect to claim 1.

Claim 2 is directed to a method for increasing the efficiency and efficacy of phosphonic compounds in controlling cotton plant defoliation and the composition is like the composition of claim 1. Thus, for at least the same reasons as discussed above with respect to claim 1, claim 2 is non-obvious over the cited publications.

The language of claim 14 parallels the language of claim 2 and is therefore nonobvious for at least the same reasons as claim 2.

Claim 19 depends from claim 1 and is nonobvious for at least the same reasons as claim 1.

Claims 4-8, 18, and 20 depend from claim 2 and are nonobvious for at least the same reasons as claim 2.

Claim 13 depends from claim 12 and is nonobvious for at least the same reasons as claim 12.

Claim 15 depends from claim 14 and is nonobvious for at least the same reasons as claim 14.

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For the reasons set forth above, Applicant respectfully submits the claims as filed are allowable over the art of record and reconsideration and issuance of a notice of allowance are respectfully requested. If it would be helpful to obtain favorable consideration of this case, the Examiner is encouraged to call and discuss this case with the undersigned.

This constitutes a request for any needed extension of time and an authorization to charge all fees therefor to deposit account No. 19-5117, if not otherwise specifically requested. The undersigned hereby authorizes the charge of any fees created by the filing of this document or any deficiency of fees submitted herewith to deposit account No. 19-5117.

Respectfully submitted,

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